

[WELLBORE COMMUNICATION SYSTEM]

Abstract

A gap collar for an electromagnetic communication unit of a downhole tool positioned in a wellbore is provided. The downhole tool communicates with a surface unit via an electromagnetic field generated by the electromagnetic communication unit. The gap collar includes a first collar having a first end connector and a second collar having a second end connector matingly connectable to the first end connector. The gap collar further includes a non-conductive insulation coating disposed on the first and/or second end connectors, and a non-conductive insulation molding positioned about an inner and/or outer surface of the collars. The insulation molding moldingly conforms to the shape collars. The connectors are provided with mated threads modified to receive the insulation coating. Measurements taken by the downhole tool may be stored in memory, and transmitted to the surface unit via the electromagnetic field.